

Claims

1. (Currently Amended) An adapter for use in a handpiece system that includes a supply conduit and a medical instrument having an electrical operating element thereon, the adapter comprising:

an adapter body; and

adapter electrical leads wherein, when the adapter is in place between the supply conduit and the medical instrument with the adapter electrical leads electrically connected to the supply conduit and to the medical instrument, electrical power is received by the adapter from the supply conduit and transmitted through the adapter to the operating element, and

wherein the adapter is selectively switchable without disassembly by a manual operation to move the adapter leads relative to the supply conduit to match a polarity of the electrical power transmitted from the supply conduit to a polarity required by the operating element.

2. (Previously presented) The adapter of claim 1 wherein the adapter electrical leads comprise first and second electrical power transmission leads and the operating element has first and second contacts to which said leads may be detachably connected in a first orientation with said first lead connected to said first contact and said second lead connected to said second contact, and said adapter is configured for rotation about an axis thereof relative to said contacts to a second orientation whereby said first lead is connected to said second contact and said second lead is connected to said first contact to reverse the polarity of electrical power transmitted to the operating element.

3. (Previously presented) The adapter of claim 2, wherein the operating element comprises a light source requiring electrical power to be supplied thereto in a selected polarity and said adapter is configured for detachment from said contacts and when detached may be rotated between at least two predetermined positions and reconnected to said contacts to permit selection of the polarity of electrical power transmitted from said supply conduit to said light source.

4. (Original) The adapter of claim 3, wherein said two predetermined positions are disposed at 180 degrees relative to each other.

5. (Previously presented) The adapter of claim 2, wherein one end of at least one of the leads comprises a slide contact.

6. (Original) The adapter of claim 2, wherein said leads and contacts are connected by non-rotatable plug contacts.

7. (Previously presented) The adapter of claim 1, wherein the adapter body is configured to accommodate lines for the transmission of fluids or drive energy extending through the adapter body.

8. (Previously presented) The adapter of claim 1 which comprises a pair of substantially fixed connectors electrically isolated from each other, said pair of connectors comprising a first connector which may be connected to a first power transmission line in said supply conduit and a second connector which may be connected to a second power transmission line in said supply conduit, the adapter electrical leads comprising a pair of substantially fixed leads electrically isolated from each other, said pair of leads comprising a first lead which may be connected to a first contact of the operating element and a second lead which may be connected to a second contact of the operating element, and a switchable connection between said connectors and said leads which when in one switched condition provides an electrical current path from said first connector to said first lead and from said second connector to said second lead, and in a second switched condition provides an electrical current path from said first connector to said second lead and from said second connector to said first lead.

9. (Original) The adapter of claim 8, wherein said switchable connection comprises portions of said first and second leads which are movable between different circuit routings to reverse the polarity of electrical power transmitted from said supply conduit to said operating element.

10. (Original) The adapter of claim 8, wherein said switchable connection comprises a switch.

11. (Original) The adapter of claim 1, wherein said leads each are divided into sections in which there are rigid sections and movable sections, and whereby different lead routing results through the connection of the movable sections to the rigid sections.

12. (Original) The adapter of claim 11, which further comprises a switch for making a selected connection between movable sections and rigid sections.

13. (Previously presented) Light emitting apparatus including a light source requiring a selected polarity of power supply connected to a supply conduit through which electrical power is transmitted and an adapter connected between the light source and the supply conduit, said adapter comprising electrical leads and being selectively switchable by a manual operation to move the electrical leads of the adapter relative to the supply conduit to match the polarity of electrical power transmitted from the supply conduit to the selected polarity required by the light source.

14. (Previously presented) The apparatus of claim 13 wherein the electrical leads of the adapter comprise first and second electrical power transmission leads and the light source is connected to first and second contacts to which said leads may be detachably connected in a first orientation with said first lead connected to said first contact and said second lead connected to said second contact, and said adapter is configured for rotation about an axis thereof relative to said contacts whereby said first lead is connected to said second contact and said second lead is connected to said first contact to reverse the polarity of electrical power transmitted to the operating element.

15. (Original) The apparatus of claim 14, wherein said adapter is configured for detachment from said contacts and when detached may be rotated between at least two predetermined positions and reconnected to said contacts to permit selection of the polarity of electrical power transmitted from said supply conduit to said light source.

16. (Original) The apparatus of claim 15, wherein said two predetermined positions are disposed at 180 degrees relative to each other.

17. (Previously presented) The apparatus of claim 13, further comprising a light conductor positioned to conduct light from said light source to a selected treatment site.

18. (Original) The apparatus of claim 14, wherein one end of a lead of said adapter comprises a slide contact.

19. (Original) The apparatus of claim 14, wherein said leads and contacts are connected by non-rotatable plug contacts.

20. (Previously presented) The apparatus of claim 13 wherein said adapter comprises a pair of substantially fixed connectors electrically isolated from each other, said pair of connectors comprising a first connector which may be connected to a first power transmission line in said supply conduit and a second connector which may be connected to a second power transmission line in said supply conduit, the electrical leads of the adapter comprising a pair of substantially fixed leads electrically isolated from each other, said pair of leads comprising a first lead which may be connected to a first contact of the light source and a second lead which may be connected to a second contact of the light source, and a switchable connection between said connectors and said leads which when in one switched condition provides an electrical current path from said first connector to said first lead and from said second connector to said second lead, and in a second switched condition provides an electrical current path from said first connector to said second lead and from said second connector to said first lead.

21. (Original) The apparatus of claim 20, wherein said switchable connection comprises portions of said first and second leads which are movable between different circuit routings to reverse the polarity of electrical power transmitted from said supply conduit to said operating element.

22. (Original) The apparatus of claim 20, wherein said switchable connection comprises a switch.

23. (Original) The apparatus of claim 13, wherein said leads each are divided into sections in which there are rigid sections and movable sections, and whereby different lead routing results through the selected connection of the movable sections to the rigid sections.

24. (Original) The apparatus of claim 23, which further comprises a switch for making a selected connection between movable sections and rigid sections.

25. (Currently Amended) A handpiece system comprising
a supply hose having a distal end coupling device with supply contacts for supplying electrical power transmission from an external power source,
a handle sleeve having a light source contained therein with receiving contacts for connecting the light source to receive electrical power from said coupling device, and
an adapter connectible between said coupling device and light source and having electrical leads, wherein the adapter is selectively switchable without disassembly by a manual operation to move the electrical leads of the adapter relative to the supply contacts of the supply conduit to match the polarity of electrical power transmitted from the power source to that needed by the light source.

26. (Previously presented) The handpiece system of claim 25, wherein the electrical leads of the adapter comprise first and second electrical power transmission leads and said receiving contacts comprise first and second contacts to which said leads may be detachably connected in a first orientation with said first lead connected to said first contact and said second lead connected to said second contact, and said adapter is configured for rotation about an axis thereof relative to said contacts to a second orientation whereby said first lead is connected to said second contact and said second lead is connected to said first contact to reverse the polarity of electrical power transmitted to the operating element.

27. (Original) The handpiece system of claim 25, wherein said adapter is configured for detachment from said receiving contacts and when detached may be rotated between at least two predetermined positions and reconnected to said receiving contacts to permit selection of the polarity of electrical power transmitted from said supply hose to said light source.

28. (Previously presented) The handpiece system of claim 25, wherein the electrical leads of the adapter comprise a pair of substantially fixed connectors electrically isolated from each other, said pair of connectors comprising a first connector which may be connected to a first power transmission line in said supply hose and a second connector which may be connected to a second power transmission line in said supply hose, a pair of substantially fixed leads electrically isolated from each other, said pair of leads comprising a first lead which may be connected to a first receiving contact of the light source and a second lead which may be connected to a second receiving contact of the light source, and a switchable connection between said connectors and said leads which when in one switched condition provides an electrical current path from said first connector to said first lead and from said second connector to said second lead, and in a second switched condition provides an electrical current path from said first connector to said second lead and from said second connector to said first lead.

29. (Original) The handpiece system of claim 28, wherein said switchable connection comprises portions of said first and second leads which are movable between different circuit routings to reverse the polarity of electrical power transmitted from said supply hose to said light source.

30. (Currently Amended) A process for matching the polarity of contacts within a handpiece system with a switchable adapter having electrical leads, the handpiece system comprising at least two separable parts including a first part adapted to supply electrical power of one polarity and a second part adapted to receive electrical power and require power of a selected polarity to be operable, the process comprising:

disconnecting the two separable parts,

inserting the switchable adapter between said parts in an arbitrary initial position in an interface between said parts with the two parts joined together by the adapter and the electrical leads of the adapter connected to each of the two parts,

attempting to operate the second part with an electrical connection provided between said parts through said adapter in said initial position,

and if operation of the second part does not occur, manually switching the switchable adapter into a second position different from said initial position without disassembling the adapter to move the electrical leads of the adapter relative to the first part to reverse the polarity of power supplied to said second part from the polarity provided with the adapter in said initial position.

31. (Previously presented) The adapter of claim 1, wherein the adapter is selectively switchable when connected by rotating at least a portion of the adapter body relative to the supply conduit and to the medical instrument.

32. (Previously presented) The apparatus of claim 13, wherein the adapter is selectively switchable by rotation.

33. (Previously presented) The handpiece system of claim 25, wherein the adapter is selectively switchable by rotation.

34. (Previously presented) The process of claim 30, wherein manually switching the switchable adapter into a second position includes rotating the adapter.

35. (Currently Amended) An adapter for use in a handpiece system that includes a supply conduit and a medical instrument having an electrical operating element thereon, the adapter comprising:

an adapter body and first and second transmission leads with respective first and second slide contacts;

wherein, when the adapter is in place between the supply conduit and the medical instrument and the slide terminals are connected, electrical power is received by the adapter from the supply conduit and transmitted through the adapter to the operating element, and

wherein the adapter is selectively switchable without disassembly by a manual operation to move the transmission leads relative to the supply conduit to match a polarity of the electrical power transmitted from the supply conduit to a polarity required by the operating element.

36. (Previously presented) Light emitting apparatus comprising:

a light source requiring a selected polarity of power supply connected to a supply conduit through which electrical power is transmitted; and

an adapter connected between the light source and the supply conduit, the adapter comprising first and second electrical power transmission leads and respective first and second slide contacts, said adapter being selectively switchable by a manual operation to move the transmission leads relative to the supply conduit to match the polarity of electrical power transmitted from the supply conduit to that required by the light source.

37. (Previously presented) A handpiece system comprising

a supply hose having a distal end coupling device with supply contacts for supplying electrical power transmission from an external power source,

a handle sleeve having a light source contained therein with receiving contacts for connecting the light source to receive electrical power from said coupling device, and

an adapter connectible between said coupling device and light source, the adapter comprising first and second electrical power transmission leads and respective first and second slide contacts connectible to the supply contacts, wherein the adapter is selectively switchable by a manual operation to move the transmission leads relative to the supply hose to match the polarity of electrical power transmitted from the power source to that needed by the light source.

38. (Previously presented) A process for matching the polarity of contacts within a handpiece system with a switchable adapter, the adapter comprising first and second electrical power transmission leads and respective first and second slide contacts, and the handpiece system comprising at least two separable parts including a first part adapted to supply electrical power of one polarity and a second part adapted to receive electrical power and require power of a selected polarity to be operable, the process comprising:

disconnecting the two separable parts,

inserting the switchable adapter between said parts in an arbitrary initial position in an interface between said parts with the two parts joined together by the adapter with each of the slide contacts connected;

attempting to operate the second part with an electrical connection provided between said parts through said adapter in said initial position, and

if operation of the second part does not occur, switching the switchable adapter into a second position different from said initial position to move the transmission leads relative to the first part to reverse the polarity of power supplied to said second part from the polarity provided with the adapter in said initial position.

39. (Previously presented) The apparatus of claim 13, wherein the apparatus comprises a sleeve defining a hollow interior space and an end cap sized to fit an end of a sleeve, and wherein the adapter is configured to be received in the sleeve with the end cap fitted to the sleeve to secure the adapter in place.